

***Pseudione humboldtensis*, a new species (Isopoda: Bopyridae) of  
parasite of *Cervimunida johni* and *Pleuroncodes monodon*  
(Anomura: Galatheidae) from the northern coast of Chile**

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**Abstract.**—*Pseudione humboldtensis*, a new species of bopyrid parasite of the squat lobsters *Cervimunida johni* and *Pleuroncodes monodon*, from the Northern coast Chile is described. This increases to six the number species of the genus *Pseudione* in Chile. *P. humboldtensis* clearly differs from the other species in the presence of smooth edges of the coxal plates, laterals and barbules, the large pleopods and the development of the female pereopods. This new record increases the total number of bopyrid species in Chilean waters to nine.

The Family Bopyridae includes 500 described species in the world, only 29 of them recorded from Eastern Pacific coast and 7 from Chile (Markham, 1992): *Pseudione galacanthae* Hansen, 1897, parasite of *Munida subrugosa* on the east Patagonian coast; *Pseudione tuberculata* Richardson, 1904, parasite of *Neolithodes diomedae* from Port Ortway; *Pseudione pausicecta* Richardson, 1904 parasite of *Munida curvipes* from the same locality; *Stegophryxus thompsoni* Nierstrasz & Brender à Brendis, 1931, parasite of pagurids; *Ionella agassizi* Bonnier, 1900, and *Ione ovata* Shino, 1964, from Puerto Montt, both parasites on *Neotripaea uncinata*; and *Pseudione brattstroemi* described by Stuardo et al. (1986a) from Coliumo Bay, also parasitizing *C. uncinata*. Finally, Román-Contreras & Wehrman, (1997) added a new species to this list describing *Pseudione chiloensis* a parasite of the caridean *Nauticaris magellanica*.

During a fisheries biology study off the northern-central Chilean coast, numerous specimens of the squat lobster *Cervimunida johni* Porter, 1903 were found parasitized by a new bopyrid species present in the gill

chambers. The morphology of the male and female of this species are described and some aspects of the host-parasite relationship are discussed.

Order Isopoda  
Suborder Epicaridea  
Family Bopyridae  
Genus *Pseudione*

*Pseudione humboldtensis*, new species  
Figs. 1-2

**Material examined.**—1530 specimens of *Cervimunida johni* collected from 12 different fishing grounds along the north central Chilean coast from 26°58'56"S to 32°01'81"S from August to October 1994.

**Type series.**—Holotype ovigerous female, Museo Nacional de Historia Natural de Chile (MNHNC) 11151; Allotype adult male MNHNC 11152; bottom trawling, 26°59'56"S, 70°57'90"W; 19 Aug 1994.

**Female.**—Oval body  $7.7 \pm 0.7$  mm in length and  $6.4 \pm 0.6$  mm in wide ( $n = 12$ ). Cephalon, pereion and pleon clearly detectable, symmetric or slightly asymmetric (Fig. 1a, 1b).

Cephalon round trapezoid, dorsal side

convex, wide and well developed frontal lamina, eyes absent.

Antennule with 3 articles completely covered by scales, article 1 massive subcubic; article 2 truncated, cone shape, with some subapical setae and a crown of apical setae; article 3 conical with 8 distal setae (Fig. 1c).

Antenna with 5 articles all with scales on surface; article 1 rectangular; article 2 conical with 1 subapical seta; article 3 similar in shape but thinner, with 2 subapical setae; article 4 cylindrical with medial and terminal setae; terminal article an ovoid flagellum with 8 distal setae (Fig. 1d).

Maxilliped of 2 articles, smaller article rounded and with irregular margin, inserted into larger endite; endite with simple palp with 13 apical and 4 basal setae (Fig. 1e, 1f).

Posteroventral edge of cephalon or barbula with 2 elongate lateral projections with smooth edges, internal margin with small digitiform projections (Fig. 1g).

Pereon of 7 pereomeres clearly detectable, coxal plates with smooth edges.

Pereopods covered by scales; increasing in size posteriorly; basis wide and well developed, ischium cylindrical with tubercles on lateral margin, increasingly conspicuous in posterior pereopods; meri subquadrate; carpi conical with group of distal setae; propodi ovoid and terminating in claw-like dactyli (Fig. 1h, i, j).

Five pairs of marsupial oostegites, first pair bilobed and separated by horizontal band with numerous digitiform projections (Fig. 1k). Posterior lobe with marginal or posterolateral round projection (sensu Markham, 1985). Other oostegites lamellar, concave with setose posterior edges (Fig. 1l), except second completely surrounded by setae.

Pleon of 5 pleomeres and pleotelson. Pleotelson with central lobe. Pleopods biramous, well-developed, with globular elongate sac-like shape of smooth edges, reaching almost entire body length, with small tubercles randomly located (cellular

group). Uropods uniramous and of similar shape to pleopods, but smaller (Fig. 1m). Lateral plates of same shape of pleopods.

*Male*.—Body elongate,  $5.8 \pm 0.6$  mm long and  $1.8 \pm 0.4$  mm broad ( $n = 12$ ). Cephalon, pereomeres and pleomeres completely differentiated, maximal width at the fourth pereomere (Fig. 2a, b).

Cephalon trapezoidal with two dorsal cephalic fissures, and two slightly pigmented anterior areas. Oral cone behind antennas and simple oral palps.

Antennulas of 3 articles; ovoid antennular base, second segment cylindrical, apex with 8 setae reaching the flagellum or last segment; flagellum with 10 central setae distally (Fig. 2c).

Antenna of 5 articles, massive base with distal portion wider than proximal; segment 2 of similar shape but shorter and thinner; segment 3 cylindrical distally setose; segment 4 cylindrical with a subapical constriction, the terminal edge of the segment with a crown of setae; segment 5 ovoid with 8 apical setae (Fig. 2d).

Pereon of 7 pereomeres clearly detectable, all rectangularly rounded united by a marked constriction.

Pereiopods covered by scales, similar in size; basis cylindrical and decreasing in size posteriorly; ischium tubular without tubercles; meri and carpi similar to those of female; propodi ovoid and larger posteriorly; dactyli prominent, claw-like and setose on internal edges (Fig. 2e, f, g).

Pleon of 5 pleomeres besides pleotelson; first 4 pleomeres similar in shape to pereomeres, but thinner; fifth pleomere of fanlike shape like pleotelson, latter with a central sharp in its lower edge. No pleopods or tubercles.

*Etymology*.—The specific name is in reference to the Humboldt current off of the Chilean coasts.

*Distribution*.—Off the northern Chilean coast from  $25^\circ$  to  $32^\circ$ S, in a depth range between 137 and 408 m.

*Hosts*.—*Pseudione humboldtensis* is found parasitizing two galatheid species,

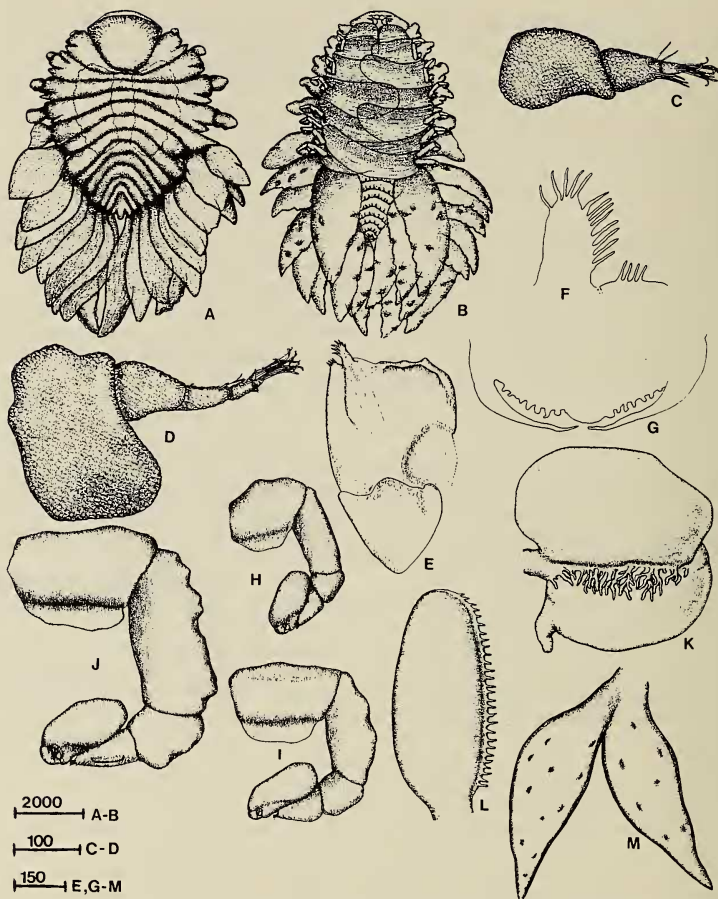


Fig. 1. *Pseudione humboldtensis*, new species, holotype female. A. Dorsal view. B. Ventral view. C. Antenna. D. Antenna. E. Maxilliped. F. Maxilliped palp. G. Barbules. H. First left pereiopod. I. Fourth left pereiopod. J. Seventh left pereiopod. K. First right oostegite. L. Last right oostegite. M. Uropods. Scale in microns.

*Cervimunida jonhi* Porter, 1903 with a prevalence of 5.8% ( $n = 1530$ ) and *Pleuroncodes monodon* (H. Milne Edwards, 1837) with an prevalence of 0.4% ( $n =$

144). In both squat lobsters, the bopyrid occupies the gill chambers with a density of 1-8 parasites per host in *C. jonhi* and 1-2 in *P. monodon*.

2000 | A-B  
50 | C-D  
200 | E-G

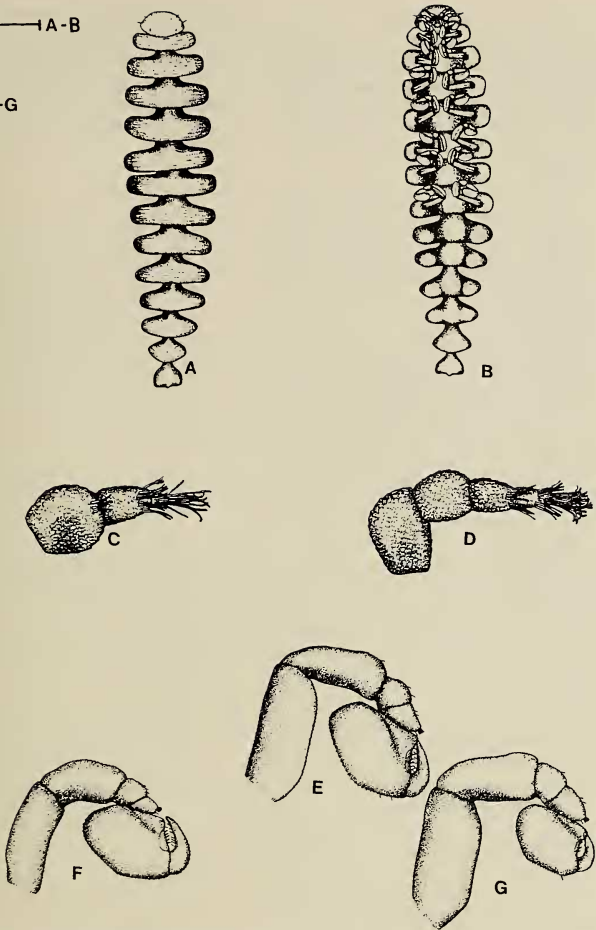


Fig. 2. *Pseudione humboldtensis*, new species, holotype male. A. Dorsal view. B. Ventral view. C. Antennula. D. Antenna. E. First left pereiopod. F. Fourth left pereiopod. G. Seventh left pereiopod. Scale in microns.

## Discussion

Species of the genera *Pseudione* and *Munidion* are the main bopyrid parasites in galatheids of the American coast of the Pacific, differing in the presence of a maxillary palp in *Pseudione* female and the fusion of the pleomers of *Munidion* male (Markham, 1975, 1985).

*Cervimunida johni* and *Pleuroncodes monodon* are two new hosts of this parasitic isopod group. Only the presence of *Munidion pleuroncodis* on the squat lobster *Pleuroncodes planipes* in the coast of California had been previously recorded (Markham 1975).

*Pseudione humboldtensis* is similar to *P. brattstroemi* and differs clearly from *P. galacanthae*, *P. tuberculata* and *P. pausicecta* in the larger size of female pleopods. However, there also are important morphological differences between both bopyrids. *P. humboldtensis* possesses smooth edges in the lateral coxal plates and barbules, is larger in size, all pereopods are similar, and lateral plates extremely extended in the female. *P. brattstroemi* has some segments of its pereopods reduced or atrophied, and lateral plates and pleopods less developed. The males differ mainly in the shape of the pleotelson, it is similar to the pleomers in *P. brattstroemi* and is fanlike in *P. humboldtensis*.

*Pseudione brattstroemi* infests *Neotri-paea uncinata*, which lives mainly in the shallow subtidal (Stuardo et al. 1986a). The hosts of *P. humboldtensis*, the squat lobsters *C. johni* and *P. monodon*, occur between 130 and 400 m deep where dissolved oxygen and temperature are lower. This could explain the larger development of female pleopods of this bopyrid, since these are respiratory in function (Shultz 1969).

With the discovery and description of *P. humboldtensis*, the number of species of bopyrids recorded in Chilean waters now is nine, six in the genus *Pseudione*.

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